NATIONAL INSTITUTES OF HEALTH
WARREN GRANT MAGNUSON CLINICAL CENTER
NURSING DEPARTMENT

PROCEDURE: Obtaining Blood Samples from Arterial Lines
Approved by:
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Formulated: 12/96
Implemented: 4/97
Revised: 4/01
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PPD/4/5/01

Procedure: Obtaining Blood Samples from Arterial Lines

A. Essential Information:

Consult with Critical Care Medicine prescriber for clinically appropriate flush solutions

For non-reservoir system arterial lines refer to AACN Procedure Manual

B. Equipment:

__Gloves
__Alcohol pads
__Appropriate type and number of labeled blood tubes
__10 cc syringe for manual flush (as indicated for patients <20kg)
__Vacutainer with interlink injector port and cannula

C.	**STEPS**		**KEY POINTS**
1.	Explain the procedure to the patient; if pediatric patient provide age appropriate explanation to the patient and family		
2.	Place arterial line alarms on standby as appropriate		
3.	Don gloves		
4.	<u>Reservoir system method.</u> __If Peds less than 20 Kg will have pediatric reservoir system. __If more than 20 Kg or adult, will have reservoir		

	system.		
a.	Peds less than 20 Kg if using MicroRate pump, turn off pump. Tubing should be open and free flowing to allow for flush.		
b.	Both reservoir systems utilize same method of blood draw.		
c.	Use an alcohol pad to cleanse Interlink injection port.		
d.	Pull back on reservoir system slowly until reservoir full.		
e.	Close shut-off valve by turning handle perpendicular to tubing.		
f.	Insert Vacutainer into injection port and use appropriate tubes for sampling.		
g.	When blood draw complete pull out Vacutainer and open shut-off valve.		
h.	Push reservoir system flexor in until blood in reservoir is removed.		

i.	For patients > 20 kg, instruct patient that you are about to flush the catheter and he may feel burning, tingling or cold sensation.		
j.	Pull pigtail until tubing cleared of blood.		
k.	For patients < 20 kg, fill a 10 cc syringe with flush solution from the stopcock at the transducer site. Flush line with as little fluid as possible in order to clear the line.		
k.	Turn on MicroRate pump, if applicable.		

D. Documentation:

Document the following in MIS and/or ICU flowsheet:

1. Blood samples drawn and time drawn
2. Volume of blood drawn
3. If the patient is fluid restricted, amount of flush infused into patient
4. How easily blood draws from the arterial line
5. The patient's response to the flushing maneuver
6. If applicable, verification of return of waveform

E. References:

1. Lynn-McHale D. and Carlson, K. (2001). AACN Procedures Manual for Critical Care. Philadelphia: W.B. Saunders, Co.

2. Daily, E. and Shroeder, J. (l994). Techniques in Bedside Hemodynamic Monitoring. St. Louis: Mosby.

3. McGhee, B., and Woods, S. (2001) Critical Care Nurses' Knowledge of Arterial Pressure Monitoring. American Journal of Critical Care. Jan 10(1) 43-51.

4. National Institutes of Health, Clinical Center Nursing Department Standard of Practice: Care of the Patient with an Arterial Line. (2/01). http://www.cc.nih.gov/nursing/artsop.html

Appendix A

Volume of Blood Discard from Arterial Lines

Flush Solution Laboratory Test Discard Amount

Heparinized Saline All but coagulation profiles 3 cc

Coagulation profile 8 cc

Normal Saline All but coagulation profiles 1 cc

Coagulation profile 1 cc

PEDIATRIC BLOOD DRAW VOLUME AMOUNTS

Arterial Blood Gas	0.4cc (Ped ABG syringe)
Coags: PT, PTT, TT, Fib	2.5cc (ped coag tube)
CBC	1.5cc (purple top)
Drug/Antibiotic Level: Albumin Digoxin Theophylline Procanamide/NAPA Lidocaine	1.5cc (red top)
Lactate	2.5cc (iced. grey top)
Type & Cross	4cc (purple top)
Blood culture for child >20 kg	Same as adult
Chemistry: MICU Panels Electrolyte Glucose Magnesium Calcium Phosphorous Uric Acid BUN Creatinine	1.5cc (SST tube, for all or just one)